Original Article

Access and availability of essential medicines in Chhattisgarh: Situation in public health facilities

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Abstract

Background: In 2013, the Government of Chhattisgarh announced a policy guaranteeing access to free generic medicines in all the public health facilities. This study was conducted with the objectives of evaluating the prescribing patterns of physicians in public health facilities with regard to generic medicines, and whether the prescribed generic medicines were made available to patients. **Materials and Methods:** This cross-sectional study was conducting from December 2013-October 2014, using exit interviews of patients. Out of the total 27 districts of the state, 15 districts were selected, and one district hospital, three community health centers, and three primary health centers were selected from each of these districts, as per logistics feasibility. Descriptive statistics in the form of frequencies and percentages were calculated. **Results:** During the data collection period, a total of 1290 prescriptions were reviewed from 100 public health facilities. Around 68.89% of the medicines prescribed were generic and were from the 2013 generic drugs list. Around 58.28% of the prescribed generic medicines were available to the patients from these public health facilities, and the rest of the medicines were procured from private pharmacies. **Conclusion:** Chhattisgarh has made considerable progress in increasing access of generic medicines to patients in public health facilities. Our study shows that for the year 2013-14, about 58% of the prescribed medicines were available in various public health facilities. There is opportunity to further improve the state financial allocation for generic medicines, to improve supply chain and logistics for better distribution, and to mandate that physicians in these facilities prescribe generic medicines.

Keywords: Generic medicine, Chhattisgarh, essential medicine

Introduction

Within any health-care system, the availability and access to medicines, vaccines, and other supplies have very critical role to play.[1] Poor availability, high medicine prices, and low affordability are key barriers to access to treatment, particularly in many low- and middle-income countries. In these countries, 20%–60% of overall health-care costs account for drugs,[2] and 50%–90% of these costs are paid as out of pocket expenditure by patients.[3] The lack of access to drugs and medicines leads to financial impoverishment and distress. In India, for example, the number of people impoverished due to spending on medicines increased from 26 million in 2004–2005 to 34 million in 2011–2012.[4] In 2011–2012, as per the estimates of the National Sample Survey Organization, consumer expenditure survey 68th round, in Chhattisgarh, the share of expenditure on medicines out of overall household expenditure on health stood at 70.1%.

Although India is known as "Pharmacy of Global South," 65% of its population do not have access to essential medicines.[3] Several barriers exist to expand the access; chiefly, iniquitous health financing, unreliable supply system, and unaffordable

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prices by the vast majority.[5] In addition, irrational prescriptions through public providers lead to purchase of nonessential and costlier medicines from outside the public health-care system and lack of trust in the quality of government-supplied medicines.

During mid-1980s, nearly one-third of the prescribed medicines were distributed free to the hospitalized patients in public health-care facilities, which declined to 9% by 2004.[6] Similarly, for outpatients, provision of free medicines in public hospitals declined to 5% from 18% over the same period. The Planning Commission Report in 2011 has suggested that to improve the availability and accessibility of essential medicines to the patients and for reducing out-of-pocket expenditure on medicines, either health insurance coverage should be extended to outpatient or there is a need for scaling up public spending to strengthen public health facilities and improve rationality of prescriptions.[6]

In 2003, Chhattisgarh became the first state in India for publishing its essential drug list (EDL), standard treatment guidelines, and state drug formulary. During the early years, Chhattisgarh had a decentralized model for drug and medicines procurement at district level, but this model failed to tap the economies of scale.[4] For the state, one of the key challenges identified was improving the access and reducing out of program experience by ensuring the availability of free generic medicines (as per the WHO definition, "A generic drug is a pharmaceutical product, usually intended to be interchangeable with an innovator product, that is manufactured without a license from the innovator company and marketed after the expiry date of the patent or other exclusive rights." Generic drugs are marketed under a nonproprietary or approved name rather than a proprietary or brand name. Generic drugs are frequently as effective as, but much cheaper than, brand name drugs. For example, paracetamol is a chemical ingredient found in several brand name of painkillers but is also sold as a generic drug (not under a brand name). The Trade-Related Aspects of Intellectual Property Rights agreement does not prevent governments from requiring accurate labeling or allowing generic substitution. A brand name is a name given to a drug by the manufacturer. The use of the name is reserved exclusively for its owner) in government hospitals. The Department of Health also proposed substantial increase in government spending on public procurement of generic medicines to distribute them freely to patients receiving care through government hospitals. Thus, in 2011, the state government set ups the Chhattisgarh Medical Services Corporation Limited (CMSCL) for centralized procurement of drugs, improves supply chain management, and prevents stock-outs and expiry of medicines. The primary responsibility of CGMSCL is to procure, test, store and supply of all kinds and variety of generic drugs medicines, suture and surgical items to the various Health facilities (Medical Colleges, District Hospitals, CHCs, PHCs); procurement, distribution, installation and maintenance of all types of medical equipments and instruments required in various health facilities in the state; and designing and construction of hospitals and other building for Department of Health, Govt. of Chhattisgarh. Currently, the state is into its fourth edition of EDL which was published in 2013. In 2013, the Government of Chhattisgarh made the decision of adopting and announcing a policy guaranteeing access to free generic medicines at all public health facilities in the state.[7]

As its technical support agency, the State Health Resource Centre (SHRC) was requested by the state to assess the financial resources required to fulfill this commitment. Using several methods, the budget provision of free generic drugs across all public health facilities was calculated to be 75.58 crores for the financial year 2013–2014.[8] First, the demand assessment was calculated using a hybrid method of a combination of consumption, morbidity, and analytical methods, using price estimation based on data on rates at which drugs were procured over the past 2–3 years. However, this could cater to only 30% of the total list of generics that was expected to cover. For the rest of the medicines, the calculation used the tender rates of Tamil Nadu Medical Stores Corporation (TNMSC), Rajasthan Medical Stores Corporation, and Kerala Medical Stores Corporation. As the prices under which TNMSC obtained drugs were found to be much lower on account of the benefits of large scale of operations and implementation tenure, an additional 20% of the costs were added to the Chhattisgarh list to arrive at the final estimates.

Access to medicines cannot be viewed simply as a technical and administrative but also has ethical and political dimensions. Shortage of medicines limits the capacity of both clinicians and governments to fulfill their moral obligations to patients and society, thus limiting equity, and it also highlights the moral and political imperative to respond to drug shortages as vigorously as possible by the public health system, thus pointing to the need for ethical ways to address these shortages.[9]

The policy guaranteeing access to free generic medicines in all the public health facilities of the state started from August 15, 2013, and this study sets out to evaluate the implementation phase, i.e., December 2013–October 2014, of the scheme. The evaluation aims to look at the distribution and access to generic medicines among patients visiting the public health facilities of the state.

Materials and Methods

Study objectives

The study was conducted with the primary objectives to evaluate the prescribing patterns of physicians in public health facilities with regard to generic medicines, and whether the prescribed generic medicines were made available to patients prescribed with those medicines. The aims of the study were to calculate (i) percentage of generic medicines prescribed by physicians in the public health facilities, (ii) percentage of generic medicines available to patients from these prescriptions, (iii) percentage of all medicines (branded and generic) available in the public health facilities, and (iv) percentage of medicines (branded and generic) that had to be purchased by the patients from private pharmacy outlets.

Study design

The study used a cross-sectional study using exit interviews of patients. In the survey, patients who exit from the hospitals

attending either outpatient or inpatient were approached for interviews along with checking of their prescriptions. The data collection was conducted in three rounds, with each round lasting for 7 days, every 4th month between December 2013 and October 2014. From each of the five administrative divisions of the state, i.e., Raipur, Durg, Bilaspur, Sarguja, and Bastar, one district was randomly selected for every round of survey. In total, 15 districts out of the total 27 districts in the state were finally selected. From each selected district using convenience sampling, one district hospital, three community health centers, and three primary health centers were selected, along with 2 medical colleges.

Data collection

For conducting the prescription survey, qualified personnel with bachelor in pharmacy (B Pharm) were identified. Before the first round of data collection, 2-day orientation training was conducted for the 4 surveyors, all of whom were qualified pharmacists, on 28th–29th November 2013 by experts in this area. The 2-day orientation included pilot testing of the survey tool based on the existing EDL of the state. Based on the feedback on the pilot study, necessary revisions were made before the actual data collection process.

Data analysis

The collected data were cleaned, edited, and coded in MS-Excel and analyzed using IBM SPSS version 20, IBM Corporation, USA. Descriptive statistics in the form of frequencies and percentages were then calculated.

Results

During the data collection period, a total of 1290 prescriptions were reviewed from 100 public health facilities [Table 1].

Table 2 provides the percentage of generic medicines prescribed by the physicians at the surveyed public health facilities across the various districts. Around 68.89% of the medicines prescribed were generic and from the EDL 2013. However, only around 58.28% of the prescribed generic medicines were available to the patients from these public health facilities. The rest of the medicines had to be procured from private pharmacies.

As shown in Table 3, overall 64.45% of total prescribed medicines including both generic and branded were made available to the patients from the public health facilities. It is to be noted that in few districts, such as Kawardha, and Bilaspur, <50% of the drugs were available to patients from the public health facilities.

The policy also describes that any patient visiting to any public health facility should get medicine on their prescription from drug store within 10 min of waiting time which was an ideal time limit to get the medicine from any public health facility. It was observed that almost every patient (93.79%) visiting public health facilities were getting medicine within 10 min of waiting time.

Table 1: Summary of selected health facilities

Type of facilities	Number of facilities selected	Number of prescription examined
Medical colleges	2	50 (25 from each)
District hospitals	15	375 (25 from each)
Community health centers	45	675 (15 from each)
Primary health centers	38	190 (5 from each)
Total number of facilities	100	1290

Table 2: Percentage of generic medicine prescribed by physicians in health facilities and its availability to patients

Division	Selected district	Generic medicines prescribed by physicians (%)	Generic medicines made available to patients (%)
Raipur	Raipur	65.82	58.87
	Baloda Bazar	63.66	54.05
	Gariaband	70.22	67.41
Durg	Durg	74.12	66.83
	Kawardha	67.32	48.04
	Balod	76.17	61.92
Bilaspur	Bilaspur	56.22	38.07
	Raigarh	55.11	45.49
	Janjgir-Champa	69.8	57.38
Sarguja	Surguja	75.75	57.38
	Koriya	60.71	47.22
	Surajpur	67.08	50.46
Bastar	Jagdalpur	60.47	50.60
	Kondagaon	78.59	70.98
	Narayanpur	87.37	84.15
State		68.89	58.28

Table 3: Availability of all medicines (generic + branded) to patients in health facilities and percentage of medicines that patient had to purchased from outside

Division	Selected district	Availability of all medicines (generic + branded) to patients (%)	Medicines (generic + branded) that patient had to purchase from outside (%)
Raipur	Raipur	71.21	28.79
	Baloda Bazar	53.45	46.55
	Gariaband	72.47	27.53
Durg	Durg	74.94	25.06
	Kawardha	48.69	51.31
	Balod	65.65	34.35
Bilaspur	Bilaspur	50.19	49.81
	Raigarh	55.56	44.44
	Janjgir-Champa	65.44	34.56
Sarguja	Surguja	68.01	31.99
	Koriya	55.22	44.78
	Surajpur	54.55	45.45
Bastar	Jagdalpur	67.37	32.63
	Kondagaon	71.55	28.45
	Narayanpur	90.05	9.95
State		64.45	35.55

60% across all WHO regions, ranging from 32% in the eastern Mediterranean region to 58% in the European region.[2] Access to

medicines is a critical component of an effective health system, and it is crucial that good quality safe medicines remain accessible, available, and affordable to the patients. The Government of Chhattisgarh has announced in 2013 a policy guaranteeing access to free generic drugs in the public health facilities of the state. Our study shows that across the selected 100 facilities (nearly 10% of total health facilities in the state), only 58.28% of the generic prescriptions were available to patients in the facilities and the rest had to purchase it from private pharmacies.

In our study, out of the total 1290 prescriptions, 68.89% of the total medicines prescribed were generic medicines. This figure is on the higher end when compared to other studies conducted in India, where it was reported being between 1% and 73.4%.[10-21] Studies in other developing countries such as Ghana, Lebanon, Nepal, and Pakistan have reported between 2.9% and 65% of total prescriptions to be generic.[22-24] However, several other developing countries have reported higher percentages of generic drugs prescribed out of total drugs prescribed, such as Bangladesh (78%),[25] Cambodia (99.8%),[26] Ethiopia (75%),[27] and Tanzania (75.5%).[28]

Our study findings of 58.28% of generic medicines being available in public health facilities are similar to the WHO figures of <60% availability of generics across all WHO regions. While the published evidence on generic medicine availability and drug stock-outs in India is limited, available reported data from various Indian states show a significant difference in the availability and stock-outs. A study done by Cameron *et al.* shows that the median availability of critical medicines in the public health system was about 30% in Chennai, 10% in Haryana, 12.5% in Karnataka, 3.3% in Maharashtra (12 districts), and 0% in West Bengal.[29] Another study conducted in Tamil Nadu and Bihar in 2010 mentioned that the mean availability of the basket of EDL drugs for Bihar on the day of the survey was about 43% as against roughly 88% for Tamil Nadu.[30] Recent survey of health-care facilities operated by either the state government or the municipal corporation of Delhi showed that the mean availability of essential medicines was 41.3% and 23.2%, respectively, whereas in tertiary health-care facilities operated under the federal government, the availability was about 50%.[31] Within the state of Chhattisgarh, a study done by SHRC in 2011 shows that the average availability of pediatric medicines was suboptimal in all sectors, and in the public sector, average availability was only 17%.[32] Our study points to the fact that the availability of generic drugs remains elusive for nearly half of the total prescriptions of the public health facilities in Chhattisgarh.

This study has several strengths; the data collectors were B. Pharm qualified personnel, public health facilities were selected from over 50% of the total districts of the state and spread across all the administrative divisions, and finally, the selected public health facilities for the exit interviews represented 10% of the total public health facilities in the state. The limitations of the study are that the data were collected based on the information obtained from patients attending health facilities and not by checking the stock registers or actual stocks from medical stores of the surveyed public health facilities.

Since only 68.80% of the total medicines prescribed across all the public health facilities in our study were generic medicines, it is required that the state government mandates the physicians in the public health facilities to prescribe generic medicines in their prescriptions. Over 35.55% of the total medicines (both branded and generic) were purchased from private pharmacies, which could lead to higher out-of-pocket expenditure. Thus, there is a need for significant improvement in the availability of generic medicines through increased financial resource allocation, proper procurement, and distribution of these drugs, across all the public health facilities in the state.

Study implications

Drug shortages have been described as "public health crises" due to their threats to prevention of acute and chronic diseases. Our study points to the fact that 58% of the patients in surveyed public health facilities had access to generic drugs. The study found that over 35% of the total medicines (both branded and generic) were purchased from private pharmacies. The advantages of greater access to generic medicines in public health facilities include benefit to patients in receiving all the care needed at a single point while the autonomy of the doctor in choosing the medicine remains unaffected.

Conclusion

Chhattisgarh has made considerable progress in increasing access of generic medicines to patients receiving treatment in public health facilities. About 58% of the prescribed medicines are available as per our study findings. There is a need to improve the state financial resources for generic medicines, improve supply chain and logistics for better distribution, and mandate that physicians in these facilities prescribe generic medicines. These measures will go a long way to ensure increased access and availability of generic medicines in the state of Chhattisgarh.

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Conflicts of interest

There are no conflicts of interest.

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